

Remarks

Claims 1-7, 14-33, and 40-53 have been cancelled without prejudice, and Applicants retain the right to file these claims in a later continuation application. Claims 8 and 34 have been amended. Support for the amendments to claims 8 and 34 may be found in the specification in ¶¶ 17 and 53-55, as well as Figures 5 and 6. Claims 54-63 are new; support for these claims may be found in paragraphs 53-55 as well as Figures 5 and 6. No new matter has been added by these amendments.

103(a) rejection

Claims 8-13 and 34-39 have been rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Publication No. 2003/0179448 to Ramsbottom ("Ramsbottom") in view of U.S. Patent No. 6,485,413 issued to Boppart ("Boppart"). Applicants respectfully request withdrawal of the rejection on the grounds that the cited art does not teach or suggest all elements of the claimed invention and further that it would not have been obvious to combine and/or modify the teachings of the cited art to arrive at the claimed invention.

Independent claim 8 recites a multi fiber optic medical probe, comprising at least two optical fibers, at least one coreless block having a rectangular cross section to which the optical fibers are coupled adjacent to, separated from and not in a coaxial arrangement with each other. Independent claim 34 recites a multi fiber optic medical probe, with at least one single mode optical fiber, at least one multimode optical fiber, and at least one coreless block having a rectangular cross section to which the single

mode optical fiber and the multimode optical fiber are coupled, the at least one coreless block providing side-coupling terminations for the single mode optical fiber and the multimode optical fiber, wherein the side-coupling terminations are arranged lateral to, not in a coaxial arrangement with and separated from each other with respect to an axis of the probe and single mode optical fiber and the multimode optical fiber are coupled to the at least one coreless block adjacent to and not in a coaxial arrangement with each other and extend adjacent to each other.

Applicants have amended claim 8 and 34 to recite that the coreless block has a rectangular cross section. Neither Ramsbottom nor Boppart teaches an optical medical probe including at least one coreless block having a rectangular cross section.

The Examiner cites elements 15 and 16 in Figure 6 of Ramsbottom as corresponding to the coreless block. The specification of Ramsbottom describes element 15 as a "90° prism with a cylindrical profile to couple light out of the capillary and direct the illumination in the 90° viewing direction." Ramsbottom, ¶154. Element 16 is a "90° prismatic lens." Id. From Figures 6(b) and 6(d) of Ramsbottom, it is clear that both elements 15 and 16 have cylindrical, or truncated cylindrical, profiles. These prisms are distinct from the coreless blocks recited in claims 8 and 34. First and foremost, they do not have a rectangular cross section. Second, nowhere in Ramsbottom is it indicated that the prisms are coreless, i.e. that they do not have a light guiding core. See specification at ¶17 (indicating that the coreless blocks do not

have a light-guiding core). Moreover, nothing in Boppart teaches these features and makes up for the deficiencies in the teachings in Ramsbottom.

Furthermore, Applicants submit that it would not have been obvious to modify the scope of Ramsbottom to include coreless blocks with rectangular cross sections instead of cylindrical prisms. The essence of the invention described in Ramsbottom is the use of an annular light pipe for transmitting light to the distal end of the scope to illuminate the object to be viewed and an image relay means (e.g., coaxial fiber) for relaying an image along the main axis from the distal end of the scope. (See Ramsbottom, ¶ 4) "The invention essentially resides in replacing a conventional annular bundle of fibers in such a device with an annular light pipe 1." (Ramsbottom, ¶ 30). Furthermore, Ramsbottom describes numerous purported advantages of an annular light pipe at paragraphs 6-11.

"If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification." MPEP § 2143.01 (V) (*citing In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)). Also, "[i]f the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious." MPEP § 2143.01 (VI) (*citing In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959))

As Ramsbottom teaches the benefits of creating an annular light pipe, it would not have been obvious to include a coreless block with a rectangular cross-section at the end of the light pipe since its cross section would not match that of the annular light pipe. As such, the inventions recited in claim 8 and claim 34, as well as in claims 9-13 and 54-58 that depend therefrom, are not obvious over the prior art. Furthermore, including a coreless block with a rectangular cross-section rather than the prism identified as element 16 in Figures 6(a)-(b) of Ramsbottom would not be effective since astigmatism would still be introduced by the cylindrical edge of the light pipe. See Ramsbottom, ¶54 (noting that the cylindrical edge of the light pipe introduces some astigmatism into the emitted light). In contrast, the coreless block does not introduce astigmatic lensing into the light emitted or received because of their rectangular cross sections.

Further, neither Ramsbottom nor Boppart teach a fiber optic medical probe with coreless block having a square cross section, as is recited in claims 54 and 59, and such a modification would not have been obvious for the same reasons that modifying the prism in Ramsbottom to have a rectangular cross section would not have been obvious.

Further, it would not have been obvious to have modified the design in Ramsbottom to make an optical probe comprising a single coreless block, as is recited in claims 55 and 60. Ramsbottom teaches having two different prisms or reflective mirrors, with one connected to the inner light pipe, and the other connected to the outer

light pipe (see figures 6(a)-6(d) and 7(a)-7(d) of Ramsbottom; see also ¶¶54-57 of Ramsbottom). There would have been no reason to modify the design of Ramsbottom to include a single coreless block rather than the two separate prisms taught, especially considering that Ramsbottom teaches that the light fibers should be arranged in a concentric manner, rather than having the fibers adjacent to and not coaxial with each other.

Further, it would not have been obvious to modify the design in Ramsbottom to make an optical probe wherein the at least one coreless block is attached to ends of the optical fibers, as is recited in claims 12 and 38. Figures 6(a)-(d) all show space between the prisms 15 and 16 and the annular light pipe 1 and fiber bundle 4(a). For this same reason, it would not have been obvious to modify the design in Ramsbottom to make an optical probe wherein the at least one coreless block is fused to ends of the optical fibers, as is recited in claims 13 and 39.

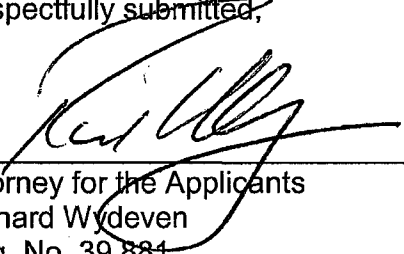
In view of the above, all objections and rejections have been sufficiently addressed. The Applicants submit that the application is now in condition for allowance and request that claims 1-13, 15-39, and 41-53 be allowed and this application passed to issue.

In the event that this paper is not timely filed, the Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account No. 02-2135.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the Applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

Respectfully submitted,

6/7/10
Date



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